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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/706,110	11/03/2000	Vyacheslav D. Grinshpun	60170A	5865

109 7590 02/18/2003

THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION
P. O. BOX 1967
MIDLAND, MI 48641-1967

EXAMINER

AHMED, SHEEBA

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 02/18/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/706,110

Applicant(s)

GRINSHPUN ET AL.

Examiner

Sheeba Ahmed

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 14,15 and 17-24 is/are rejected.
- 7) ☐ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2-4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group III claims 14-24 in Paper No. 6 is acknowledged. Claims 1-13 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected Groups I and II.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 14, 15, 17, 21, and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Baxter et al. (GB 1,061,702).

Baxter et al. (GB 1,061,702) discloses insulating materials for building comprising an extruded polyethylene sheet having a cross section in the form of a rectangular network of interconnected foamed polyethylene elements so that in effect the material consists of a bundle of hollow tubes having foamed polyethylene walls (*thus meeting the limitations that the structure comprises a plurality of coalesced hollow extruded strands as recited in **claim 14** given that the term coalesced is defined as a structure that arises from the combination of distinct elements and in this case the bundle arises from the combination of the hollow tubes of foamed polyethylene and meeting the limitation that the foam comprises an olefin homopolymer as recited in **claim 15** given*

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that polyethylene is an olefin homopolymer). The overall density of the sheet is 1.6 pounds per cubic foot and that of the individual foamed elements is 3.7 pounds per cubic foot (*thus meeting the limitations of **claim 21***) (Column 1, lines 9-12 and Column 2, lines 59-72). The individual foamed elements have a closed-cell structure (*thus meeting the limitations of **claim 17** given that the Examiner takes the position that 100% of the foam disclosed by Baxter et al. has a closed cell structure*) (Column 3, lines 38-41). The Examiner takes the position that the foam insulating material disclosed by Baxter et al. must be both sound and thermally insulating to a certain degree and thus meets the limitations of **claim 22**. All limitations of claims 14, 15, 17, 21, and 22 are disclosed in the above reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over DeBlander (US 6,007,890) in view of Baxter et al. (GB 1,061,702).

DeBlander discloses an acoustic insulating panel having a soft core with cavities in contact with two outer facings (See Abstract). The soft core may be an elastic, closed cell, crosslinked and non-crosslinked polyethylene-based foam having a plurality of coalesced expanded strands of foamed polyethylene polymer (Column 2, lines 63-67).

The outer facings may be any material used to make insulating panels and examples include gypsum plasterboards and plywood (Column 58, lines 1-19).

DeBlander does not teach that their soft core is a plurality of coalesced hollow strands of polyethylene.

However, Baxter et al. (GB 1,061,702) discloses insulating materials for building comprising an extruded polyethylene sheet having a cross section in the form of a rectangular network of interconnected foamed polyethylene elements so that in effect the material consists of a bundle of hollow tubes having foamed polyethylene walls *(thus meeting the limitations that the structure comprises a plurality of coalesced hollow extruded strands given that the term coalesced is defined as a structure that arises from the combination of distinct elements and in this case the bundle arises from the combination of the hollow tubes of foamed polyethylene)*. The individual foamed elements have a closed-cell structure (Column 3, lines 38-41) and this insulating material is flexible, can be stored in rolls, is non-dusting, safe and easy to cut to size (Column 3, line 64 and Column 4, lines 1-3).

Accordingly, it would have been obvious to one having ordinary skill in the art to replace the soft core of an elastic, closed cell, crosslinked and non-crosslinked polyethylene-based foam having a plurality of coalesced expanded strands of foamed polyethylene polymer, as taught by DeBlander, with the extruded polyethylene sheet consisting of a bundle of hollow tubes having foamed polyethylene walls, as taught by Baxter et al., given that Baxter et al. specifically teach that their extruded polyethylene sheet consisting of a bundle of hollow tubes having foamed polyethylene walls is

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flexible, can be stored in rolls, is non-dusting, safe and easy to cut to size (Column 3, line 64 and Column 4, lines 1-3).

4. Claims 19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baxter et al. (GB 1,061,702) in view of Malone (US 4,824,720).

Baxter et al. discloses insulating materials for building comprising an extruded polyethylene sheet having a cross section in the form of a rectangular network of interconnected foamed polyethylene elements so that in effect the material consists of a bundle of hollow tubes having foamed polyethylene walls (*thus meeting the limitations that the structure comprises a plurality of coalesced hollow extruded strands given that the term coalesced is defined as a structure that arises from the combination of distinct elements and in this case the bundle arises from the combination of the hollow tubes of foamed polyethylene*). The individual foamed elements have a closed-cell structure (Column 3, lines 38-41) and this insulating material is flexible, can be stored in rolls, is non-dusting, safe and easy to cut to size (Column 3, line 64 and Column 4, lines 1-3).

Baxter et al. do not disclose that their insulating material further comprises a plurality of solid foamed strands.

However, Malone discloses foamed products comprising a plurality of coalesced distinguishable expanded strands (Column 1, lines 11-13) of a thermoplastic composition (Column 2, lines 42-47) and having improved cushioning properties at low static loadings (Column 2, lines 16-19). Examples of the thermoplastic composition include copolymers of ethylene and a copolymerizable polar monomer (Column 3, lines

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57-65). The foams are prepared forcing a molten extrudate through a die plate comprising small holes (*thus indicating that the strands produced are solid and not hollow*) (Column 4, lines 53-55).

Accordingly, it would have been obvious to one having ordinary skill in the art to add a plurality of solid coalesced distinguishable expanded strands to the insulating material taught by Baxter et al. given that Malone teaches that solid coalesced distinguishable expanded strands improve cushioning properties at low static loads.

5. Claims 15, 17, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baxter et al. (GB 1,061,702) in view of Wilson et al. (US 6,245,826 B1).

Baxter et al. disclose insulating materials for building comprising an extruded polyethylene sheet having a cross section in the form of a rectangular network of interconnected foamed polyethylene elements so that in effect the material consists of a bundle of hollow tubes having foamed polyethylene walls (*thus meeting the limitations that the structure comprises a plurality of coalesced hollow extruded strands given that the term coalesced is defined as a structure that arises from the combination of distinct elements and in this case the bundle arises from the combination of the hollow tubes of foamed polyethylene*). The individual foamed elements have a closed-cell structure (Column 3, lines 38-41) and this insulating material is flexible, can be stored in rolls, is non-dusting, safe and easy to cut to size (Column 3, line 64 and Column 4, lines 1-3).

Baxter et al. do not disclose that their foam comprises closed cell polyurethane foam.

However, Wilson et al. disclose a foam exhibiting improved dimensional stability and thermal insulation proprieties (Column 1, lines 13-17) and comprising a polyisocyanate based rigid closed cell foam made by reacting an organic isocyanate with a polyol composition in the presence of a blowing agent (Column 3, lines 15-18). The foam can be prepared with or without the use of a crosslinker (*the Examiner takes the position that a thermoset material is produced when the crosslinker is used*) (Column 13, lines 59-64). The foam is closed cell and the number of closed cells is 80% or greater and the rigid polyurethane foam exhibits little or no shrinkage (Column 18, lines 35-46).

Accordingly, it would have been obvious to one having ordinary skill in the art to replace the foamed polyethylene resin taught by Baxter et al. with a foamed closed cell polyisocyanate-based or polyurethane resin as taught by Wilson et al. given that Wilson et al. specifically teach their foamed resin exhibits improved dimensional stability and thermal insulation proprieties and further exhibits little or no shrinkage.

6. Claims 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baxter et al. (GB 1,061,702) in view of Park et al. (US 6,174,471 B1).

Baxter et al. disclose insulating materials for building comprising an extruded polyethylene sheet having a cross section in the form of a rectangular network of interconnected foamed polyethylene elements so that in effect the material consists of a

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bundle of hollow tubes having foamed polyethylene walls (*thus meeting the limitations that the structure comprises a plurality of coalesced hollow extruded strands given that the term coalesced is defined as a structure that arises from the combination of distinct elements and in this case the bundle arises from the combination of the hollow tubes of foamed polyethylene*). The individual foamed elements have a closed-cell structure (Column 3, lines 38-41) and this insulating material is flexible, can be stored in rolls, is non-dusting, safe and easy to cut to size (Column 3, line 64 and Column 4, lines 1-3).

Baxter et al. do not disclose that their cellular foam comprises a blend of polystyrene and ethylene/styrene interpolymers and that the foam may be open-celled.

However, Park et al. disclose an open-cell foam comprising a blend of an alkenyl aromatic polymer, preferably styrene, and a random interpolymers, preferably a random ethylene-styrene interpolymers, and having improved surface quality and a controllable level of open cells (Column 2, lines 27-34 and Column 4, lines 15-20) that may be used in vacuum insulation (Column 4, lines 7-8). The open cell foam comprising styrene and the interpolymers of ethylene-styrene may be formed in coalesced strand foam by extrusion through a multi-orifice die (Column 10, lines 44-60). The foam preferably contains at least 50 percent open cells as measured according to ASTM D 2856-A (Column 13, lines 54-57).

Accordingly, it would have been obvious to one having ordinary skill in the art to replace the foamed polyethylene resin used by Baxter et al. with a foamed open cell composition comprising styrene and the interpolymers of ethylene-styrene given that

Park et al. specifically teach that such a composition provides improved surface quality and a controllable level of open cells.

Allowable Subject Matter

7. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 16 recites a cellular foam structure comprising a plurality of coalesced, *hollow extruded strands wherein the strands have different polymeric compositions.*

The prior art fails to disclose or render obvious a cellular foam comprising a plurality of coalesced, hollow extruded strands wherein the strands have different polymeric compositions. The closest prior art, Baxter et al. (GB 1,061,702), discloses insulating materials for building comprising an extruded polyethylene sheet having a cross section in the form of a rectangular network of interconnected foamed polyethylene elements so that in effect the material consists of a bundle of hollow tubes having foamed polyethylene walls and hence *only discloses or renders obvious a structure comprising a bundle of hollow tubes of the same composition.*

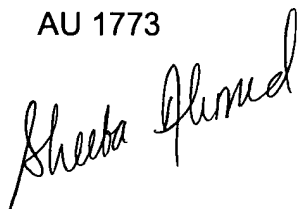
Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (703)305-0594. The examiner can normally be reached on Mondays and Thursdays from 8am to 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (703)308-2367. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-5408 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)306-5665.

Sheeba Ahmed
AU 1773

A handwritten signature in cursive script that reads "Sheeba Ahmed".

February 10, 2003